ject which approaches the present state of the science; and from the same arrangement being used as that adopted in the British Museum, it forms an excellent manual for that collection.

In the Press.

A Naturalist's Rambles on the Devonshire Coast.
By P. H. Gosse, A.L.S.

This work will embody the result of researches and observations made by the author among the rocks, caves and tide-pools of the interesting shores of North and South Devon; and will comprise the most beautiful and interesting forms of sea-side Natural History, many of which are as yet undescribed.

PROCEEDINGS OF LEARNED SOCIETIES.

ROYAL SOCIETY.

Jan. 13, 1853.—A paper was read, entitled "Description of some species of the extinct genus *Nesodon*." By Prof. Owen, F.R.S.

The author commences by referring to a genus of extinct herbivorous mammals which he had founded in 1836, on certain fossil remains discovered in Patagonia, and which, from the insular disposition of the enamel folds characteristic of the molar teeth, he had called *Nesodon*. Subsequent transmissions of fossils from the same part of South America, by their discoverer, Capt. Sulivan, R.N., now enabled the author to define four species of the genus. The first which he describes is founded on a considerable portion of the cranium and the lower jaw, with the teeth, and is called *Nesodon ovinus*. After the requisite osteological details and comparisons the author proceeds to describe the three incisors, the canine, and five molar teeth, which are present on each side of both upper and lower jaws, and then enters upon an inquiry as to the nature and homologies of the grinding teeth. The result is to show that the first four molars belong, with the incisors and canines, to the deciduous series, and that the fifth molar is the first true molar of the permanent series; the germ of a second true molar was discovered behind this, in both the upper and the lower jaws, whence the author concludes that the *Nesodon ovinus* had the typical number of teeth when the permanent series was fully developed, viz. $i\,\frac{3-3}{3-3}$, $c\,\frac{1-1}{1-1}$, $p\,\frac{4-4}{4-4}$ $m\,\frac{3-3}{3-3} = 44$.

The structure of the grinding teeth proving the extinct animal to have been herbivorous, the number and kinds of teeth in the entire series show that it was ungulate. In this great natural series of mammalia the author next shows that the *Nesodon* had the nearest affinities to the odd-toed or Perissodactyle order amongst the existing species; but certain modifications of structure, hitherto peculiar to the even-toed or Artiodactyle Ungulates, are repeated in the cranium of the *Nesodon*: more important marks of affinity are pointed out in the *Nesodon* to the *Toxodon*; and both these extinct forms of South

American herbivores are shown to agree with each other in characters of greater value, derived from the osseous and dental systems, than any of those by which the *Nesodon* resembles either the Perissodactyle or Artiodactyle divisions of hoofed animals.

The genus *Nesodon* is characterized by the following modifications of the teeth, which in number and kind are according to the typical dental formula above given. *Incisors* trenchant, with long, slightly curved crowns, of limited growth: *canines* small, not exceeding in length the contiguous premolars. *Molars*, in the upper jaw, with long, curved, transversely compressed crowns, which contract as they penetrate the bone and ultimately develope fangs; the outer side of the crown ridged, the inner side penetrated by two more or less complex folds of enamel, leaving insular patches on the worn crown: enamel thin. The *lower molars*, long, straight, and compressed; divided by an external longitudinal indent into two unequal lobes, both penetrated at the inner side by a fold of enamel, which is complex in the hinder lobe. All the teeth have exserted crowns of equal height and arranged in an unbroken series. The bony palate is entire and extends back beyond the molars, the maxillaries and palatines forming the back part in equal proportions. A distinct articular cavity and eminence for the lower jaw; the eminence long and concave transversely, short and convex longitudinally; a protuberant post-glenoid process; a strong and deep zygoma, the orbit and temporal fossa widely intercommunicating; the premaxillaries join the nasals.

Of the genus presenting the above dental and osteal characters the author defines four species:—the first, about the size of a Llama, is the *Nesodon imbricatus*; the second, of the size of a Zebra, is the *Nesodon Sulivani*; the species to which belong the portions of skull, with the teeth, described in the present memoir, did not exceed the size of a large sheep, and is termed the *Nesodon ovinus*; fourthly, a species of the size of a Rhinoceros, *Nesodon magnus*, is satisfactorily indicated by a grinder of the upper jaw. In conclusion, the author remarks, that the osteological characters defining the orders of hoofed quadrupeds, called *Proboscidia*, *Perissodactyla* and *Artiodactyla*, are associated with modifications of the soft parts of such importance, as not only to establish the principle of that ternary division of the great natural group of *Ungulata*, but to indicate that the known modifications of the skeleton of the extinct Toxodons and Nesodons of South America, in the degree in which they differ from the osteology of the already defined orders of *Ungulata*, must have been associated with concomitant modifications of other parts of their structure which would lead to their being placed in a distinct division, equal to the *Proboscidia*; and, like that order, to be more nearly allied to the *Perissodactyla* than the *Artiodactyla*. This new division of the *Ungulata* the author proposes to call *Toxodontia*, and he remarks that its dental and osteal characters, while they illustrate the close mutual affinities between the Nesodons and Toxodons, tend to dissipate much of the obscurity supposed to involve the true affinities of the *Toxodon*, and to reconcile the conflicting opinions as to the proper position of that genus in the mammalian class.